

Serial No. : 10/019,181
Filed : July 8, 2002

The probe 102 continuously sweeps the field distribution measurement screen 100 without pausing at each sampling point (measuring point) so that the probe 102 can sweep without loss for maximum measurement throughput. As exemplified in FIG. 6, the probe 102 is ~~mover~~ moved in the positive direction along the x-axis, then moved by a prescribed value in the positive direction along the y-axis, next moved in the negative direction along the x-axis, then moved by a prescribed value in the positive direction along the y-axis, and then moved in the positive direction along the x-axis. The probe 102 repeats these motions ~~to be moved~~ so as to sweep substantially all the surface of the field distribution measurement screen 100 (hereinafter call such sweep "zigzag sweep").

(3) The paragraph from page 3, line 16 to page 3, line 19 has been amended as follows:

Next, the data stored by the buffer memory 108 are developed on a two-dimensional plane by the computing/display unit 110, and a two-dimensional field distribution of electric fields or magnetic fields can be ~~provided~~ displayed.

(4) The paragraph from page 4, line ~~16~~¹² to page ~~4~~⁴, line ~~19~~¹⁶ has been amended as follows:

Accordingly, by developing a field distribution on a two-dimensional plane, based on the position information outputted by the probe sweep control unit 104, correct two-dimensional

See reply filed 5-17-04 - correction made here to identification page & line number of Specification 100 amended 5/16/04

Serial No. : 10/019,181
Filed : July 8, 2002

images of electric fields or magnetic fields cannot be provided obtained.

(5) The paragraph from page 4, line ³³~~34~~ to page 5, line 13 has been amended as follows:

In the above-described field distribution measuring method, it is possible that the method comprises the steps of: storing a plurality of measured data ~~measured~~ obtained by the probe sweeping in a first direction together with position information of the probe as reference data; storing a plurality of measured data ~~measured~~ obtained by the probe sweeping in a second direction opposite to the first direction together with position information of the probe as adjustment data; interpolating the adjustment data to compute interpolated data with data between the sampling points interpolated; computing spatial frequency power spectra for the reference data and the interpolated data; and computing the shift amount of the sampling points, based on the spatial frequency power spectra.

(6) The paragraph from page 6, line 4 to page 6, line 20 has been amended as follows:

The above-described object can be also achieved by a field distribution measuring apparatus comprising: a probe for detecting an electric field or a magnetic field at a plurality of sampling points while continuously sweeping on a plane or in a space; a measuring unit for measuring the electric field

See reply filed 5-17-04 - correction made
here to location line number of
specification and
6-14-04

Serial No. : 10/019,181
Filed : July 8, 2002

or the magnetic field detected by the probe; a storing unit for storing data of the electric field or the magnetic field measured by the measuring unit together with position data of the probe; a data processing unit for computing a shift amount of sampling points generated by a displacement between a position of the probe and a measuring timing, based on data stored in the storing unit; and a computing unit for computing a spatial distribution of the electric field or the magnetic field detected by the probe, in consideration of the shift amount of the sampling points computed by the data processing unit.

(7) The paragraph from page 7, line ¹⁴~~15~~ to page 7, line ¹⁵~~16~~ has been amended as follows:

~~FIG. 4 is~~ FIG. 4A and FIG. 4B are views of field distributions measured by the conventional field distribution measuring method.

(8) The paragraph from page 7, line ¹⁶~~17~~ to page 7, line 18 has been amended as follows:

~~FIG. 5 is~~ FIG. 5A and FIG. 5B are views of field distributions measured by the field distribution measuring method according to the embodiment of the present invention.

(9) The paragraph from page 8, line 6 to page 8, line 26 has been amended as follows:

A probe 12 for detecting electric fields or magnetic fields is provided on a field distribution measurement screen

See reply filed 5-17-04 - corrected
here to location, the number of specification and 11:
6-17-04

Serial No. : 10/019,181
Filed : July 8, 2002

and, in consideration of an amount of the displacement, a distribution of the electric fields or magnetic fields is measured, whereby measuring noises generated by the displacement between probe positions and measuring timings can be properly removed.

(17) The paragraph from page 16, line 13 to page 16, line 19 has been amended as follows:

For example, in the above-described embodiment, the field distribution measurement screen 10 is two-dimensional. However, the field distribution measurement screen 10 may be three-dimensional. In this case, the adjustment data have 2 two or more groups. The adjustment parameters are 2 two or more, and the spatial frequency power spectra for the evaluation are two or more dimensional.

(18) The paragraph from page 16, line 31 to page 17, line 11 has been amended as follows:

In the above-described embodiment, as a most desirable state, a shift amount for minimizing an accumulated ~~values~~ value of spatial frequency power spectra is utilized to remove measuring noises, but a shift amount for minimizing an accumulated value of spatial frequency power spectra may not always need to be used. ~~In the present embodiment, as a most desirable state, a shift amount for minimizing an accumulated value of spatial frequency power spectra is used. However,~~ the The effect of the present invention is achieved by setting

Serial No. : 10/019,181
Filed : July 8, 2002

a shift amount dx at a value which makes an accumulated value of spatial frequency power spectra smaller than that without measuring noises removed. Accordingly, measuring noises may be removed by utilizing a shift amount which makes an accumulated value of spatial frequency power spectra below a prescribed value, e.g., below $1/10$ of an accumulated value of spatial frequency power spectra without measuring noises removed.

(19) The paragraph from page 17, line 14 to page 17, line 30 has been amended as follows:

According to the field distribution measuring method and apparatus ~~according to~~ of the present invention, in measuring spatial distribution of electric fields or magnetic fields by ~~the probe continuously sweeping,~~ sweeping and measuring at a plurality of sampling points by a probe, which involves spurious spectra generated due to displacement between positions of the probe and measuring timings, a shift amount of the sampling is computed, and a distribution of electric fields or magnetic fields is measured in consideration of the shift amount, whereby measuring noises generated due to offsets of sweeping positions of the probe and the measuring timings can be properly removed. The present invention is useful as field distribution methods and apparatuses for measuring two-dimension distributions of electric fields or magnetic fields of small-antenna directivity evaluating